REMARKS

Claims 1-19 are pending in the application. Claims 1 and 4 have been amended by the present amendment. The amendments are fully supported by the specification as originally filed. For example, as described on page 11, lines 6-12, no reference light generator is used in the Applicants' claimed invention, and therefore specific amounts of incident light are not required (see also page 15, lines 1-7). As amended, claims 1 and 4 recite that the calculated output corresponding to a non-defective transducer is used in determining the presence/absence of a defect in the subject photoelectric transducer (see page 12, line 7 to page 13, line 16).

Applicants' claimed invention is directed to a pixel defect detector, including a calculation section for obtaining output characteristics of a subject photoelectric transducer, where an output of a non-defective photoelectric transducer is calculated based on outputs from a plurality of photoelectric transducers neighboring the subject photoelectric transducer, but without requiring specific amounts of incident light. As explained in the specification, y_0, y_1, y_2, y_3, ..., y_{n-1} in expressions (5) through (7) refer to measured values which are output values corresponding to N amounts of incident light within the same pixel of the CCD (see page 13, line 18 to end of page 14), where y_0 represents a first measured value corresponding to an amount of incident light x_0. In expression (8), y_1 to y_5 express output values of peripheral pixels at the same measured time, and y_0 represents an output value of the median filter (see page 15, line 21 to page 16, line 9).

As amended, claims 1 and 4 require the calculated output corresponding to a non-defective transducer is used in determining the presence/absence of a defect in the subject photoelectric transducer.

In other words, according to the Applicants' claimed invention, the presence/absence of a defect in the subject photoelectric transducer is determined based on the output of a non-defective transducer, which is calculated based on outputs from neighboring transducers. An advantage of the Applicants' claimed invention is that a reference light generator is not required (see page 9, lines 6-11), and thus specific amounts of incident light are not needed.

The specification has been amended to include a sentence on page 15 introducing an example having an amount x_0 of incident light. No new matter is added. The amendment is fully supported by disclosure elsewhere in the specification (see, e.g., page 13, lines 18-24; page 17, lines 10-15).

Claims 1-3 and 7 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,034,794 to Suganuma in view of U.S. Patent 6,683,643 to Takayama et al. (hereinafter "Takayama"). Claims 4, 8, and 9 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 4,602,291 to Temes in view of Suganuma and further in view of Takayama.

In the Office Action, column 12, lines 43-63 of Suganuma were cited for teaching "[a]n average of the levels of the pixels preceding and following any defective pixel ... is output in place of the signal produced by the defective pixel" (Office Action, page 3, paragraph 5).

However, Suganuma does not teach or suggest "determining the presence/absence of a defect in the subject photoelectric transducer" based on output characteristics of a subject photoelectric transducer, where the output characteristics are determined based on outputs from neighboring photoelectric transducers.

In Suganuma, as described in column 12, lines 43-63, a pixel defect corrector 133 compares the level of each pixel signal S with a predetermined threshold to determine whether the corresponding pixel is defective. Then, the pixel defect corrector 133 outputs a pixel signal that is the average of "pixel signals S which precede and follow the inputted pixel signal S" in place of the defective pixel signal (column 12, lines 57-63).

Therefore, Suganuma does not determine output characteristics of a subject photoelectric transducer for "determining the presence/absence of a defect in the subject photoelectric transducer," as recited in claims 1 and 4. In other words, the Applicants' claimed invention uses information concerning neighboring photoelectric transducers in the determination of a defect.

In contrast, Suganuma uses information concerning neighboring photoelectric transducers to **correct a defect** (i.e., after a defect is detected).

As explained above, the defective pixel corrector 133 initially compares the level of each pixel signal S with a predetermined threshold (i.e., defect detection). Thereafter, the defective pixel corrector 133 replaces a defective pixel signal with a pixel signal S averaged based on the preceding and following pixel signals (i.e., defect correction). It is not possible to substitute the defect correction taught in column 12, lines 57-63 for the defect detection process of Suganuma. Any such combination would be based on impermissible hindsight reasoning gleaned from the Applicants' specification.

In the Office Action, Takayama was cited for teaching "using only neighboring pixels of the same color to produce a correct output" (Office Action, page 3, par. 5). However, this limitation has been canceled from claims 1 and 4.

For at least the reasons discussed above, Suganuma does not anticipate or otherwise render obvious the Applicants' claimed invention. Moreover, Suganuma could not be combined with any other prior art references to somehow produce the Applicants' claimed invention.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

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